

REMARKS

This application has been reviewed in light of the Office Action dated June 4, 2004. Claims 1-3 and 5-11 are pending in this application. Claim 4 has been canceled, without prejudice or disclaimer of subject matter. Claims 1-3, 5, and 7-11 have been amended to define still more clearly what Applicant regards as his invention. Claims 1, 8, and 10 are in independent form. Favorable reconsideration is requested.

The Office Action rejected Claims 1, 2, and 4-11 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,920,658 (Yamagata et al.), and rejected Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yamagata et al. and U.S. Patent No. 5,999,649 (Nicholson). Applicant respectfully traverses these rejections.

Applicant submits that amended independent Claims 1, 8, and 10, together with the remaining claims dependent thereon, are patentably distinct from Yamagata et al. at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is an image processing apparatus for correcting a positional offset between an input image and a reference image. The apparatus includes a storage means for storing information about the reference image, including a reference position, an area information specifying means for obtaining information about a plurality of areas included in the input image, the information including left end coordinates and upper end coordinates of the plurality of areas, and a target position setting means for obtaining a leftmost end coordinate from among the left end coordinates of the plurality of areas included in the information obtained by the area information specifying means, obtaining an uppermost end coordinate from among the upper end coordinates of the plurality of areas, and setting the obtained leftmost end coordinate and the uppermost end

coordinate as a target position. The apparatus also includes a calculating means for specifying information about the reference image in accordance with the input image from the storage means, and calculating a positional offset between the reference position included in the specified information and the target position set by the target position setting means, and a correcting means for correcting positions of a plurality of areas included in the input image by using the positional offset calculated by the calculating means.

Among the important features of Claim 1 is that the target position setting means obtains a leftmost end coordinate from among the left end coordinates of the plurality of areas included in the information obtained by the area information specifying means, obtains an uppermost end coordinate from among the upper end coordinates of the plurality of areas, and sets the obtained leftmost end coordinate and the uppermost end coordinate as a target position. In an apparatus having the features recited in Claim 1, a positional offset between the input image and the reference image is corrected by using a positional offset between a target position in the input image and a reference position in the reference image. The target position is obtained, as shown in Figure 5, by obtaining an uppermost end coordinate from among upper end coordinates of a plurality of areas included in an input image, and a leftmost end coordinate from among left end coordinates of the plurality of areas.

Yamagata et al., as understood by Applicant, relates to an image position correction system and method. In Yamagata et al., minimal circumscribing rectangles of each pattern in an input image are extracted, and then the center of the minimal circumscribing rectangles for each pattern are calculated. Similarly, minimal circumscribing rectangles of each pattern in a standard image are extracted, and then the center of the minimal circumscribing rectangles for each pattern are calculated. In Yamagata et al., after calculating

the centers, sets of centers corresponding between the input image and the standard image are obtained (as shown in Figure 14). After obtaining the sets, a positional adjustment between the input image and the standard image can be made by performing affine transformation (see col. 8, line 31) by using the sets. Applicant submits that since the above-mentioned processing of calculating the centers, obtaining the sets, and performing affine transformation is more complex more than the apparatus having the features recited in Claim 1, the above-mentioned processing discussed in Yamagata et al. takes more time. In addition, Applicant submits that nothing has been found in Yamagata et al. that would teach or suggest the feature of the target position setting means that obtains a leftmost end coordinate from among the left end coordinates of the plurality of areas included in the information obtained by the area information specifying means, obtains an uppermost end coordinate from among the upper end coordinates of the plurality of areas, and sets the obtained leftmost end coordinate and the uppermost end coordinate as a target position, as recited in Claim 1.

Accordingly, Applicant submits that at least for these reasons, Claim 1 is patentable over Yamagata et al.

Independent Claims 8 and 10 are method and storage medium claims, respectively, that correspond to apparatus Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.


A review of the other art of record including Nicholson has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and the allowance of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

A handwritten signature in cursive script, reading "Peter G. Thurlow", is written over a horizontal line.

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